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NORTHEASTERN RESEARCH NOTES

NORTHEASTERN FOREST EXPERIMENT STATION
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HEAVY SEED CROP FORECAST FOR VIRGINIA PINE IN 1953

It is commonly believed that Virginia pine produces a good seed crop every year. However, observation of seed fall at the Beltsville (Md.) Experimental Forest indicates a periodicity in seed production by this species. Records from experimental plots during the past 3 years show these results:

Cones matured (year)	Seeds per acre (number)
1950	110,000
1951	46,000
1952	30,000

Observation of cones on trees felled in the autumn of 1952 substantiates the existence of definite seed years. Figure 1 shows a defoliated Virginia pine branch that represents average cone production for the 1952 and 1953 seed crops.

For one mature cone of the 1952 crop there are on this branch nine immature cones for the 1953 crop. If all the immature cones ripen, the

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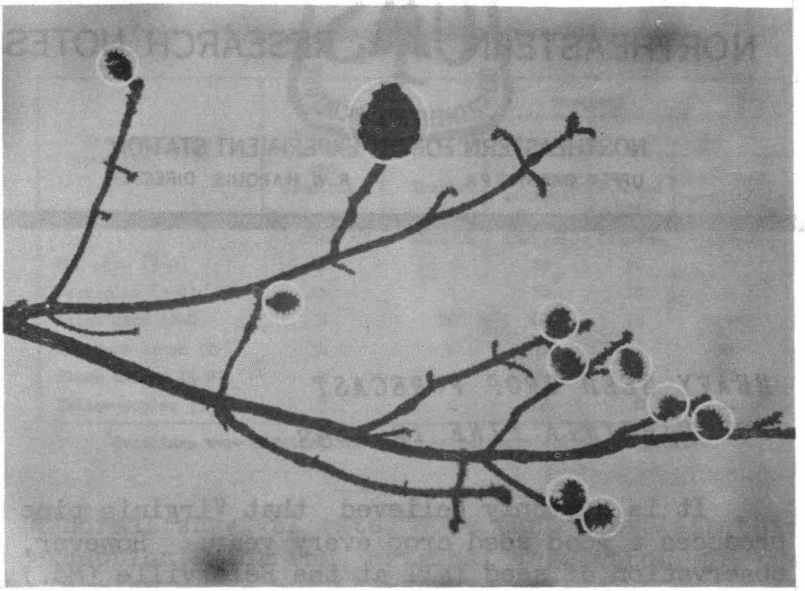

Cones of the 1952 and 1953 cone crops on a branch of a Virginia pine felled in autumn of 1952. In the large circle is a single cone of the 1952 crop. The small circles mark 9 cones of the 1953 crop.

1953 seed crop should be nine times heavier than that produced in 1952.

Of course some cones will probably die before they mature. And the cones that mature (they usually mature early in October) may have fewer seeds than in former years. Nevertheless, an unusually good Virginia pine seed crop is forecast for 1953.

--THOMAS W. CHURCH, JR.

DO NOT PLANT TREES TOO SOON AFTER USING WEED KILLERS

Caution must be used in planting tree seedlings in areas previously treated with herbicides to remove competition. In scrub oak lands in Pennsylvania nearly total failure resulted from planting 7 days or less after poisoning.

A small study was made at the Delaware-Lehigh Experimental Forest in the spring of 1952 to test the efficacy of treating small planting spots just large enough for one tree seedling. Each spot was prepared by spraying a herbicide on the brush and ground cover over an area about 2 feet in diameter.

A 3-percent solution in oil of three parts 2,4,5-T plus one part 2,4-D was used. The herbicide was sprayed on the brush and ground cover late in April and during the first week in May, while the brush was in dormant condition.

Four to seven days after spraying, a seedling was planted in each spot. This short time lapse was scheduled with some misgiving, in fear that the herbicide might still be lethal at the treated spot at planting time. No reliable information about this could be found, however; a few references merely said the herbicides "have little residual effect."

Without a doubt the herbicide was lethal to most of the seedlings (table 1). None of the hardwood species survived. All the Japanese larch--not particularly robust stock--also died. Of the pines, only one block of red pine showed

Table 1.—Effect of herbicide treatment on seedling survival

Species (and age)	Time between treatment and planting	Survival			
		Block A		Block B	
		Treated	Untreated control	Treated	Untreated control
	Days	Percent	Percent	Percent	Percent
Red pine (3-0)	5	5	65	70	75
Jack pine (2-0)	5	4	36*	18	45
Pitch pine (2-0)	5	20	64	16	72
Japanese larch (2-1)	4	0	92	0	24
Black cherry (1-0)	3	0	70	0	80
Yellow-poplar (1-0)	7	0	86	0	74

*Seedlings were difficult to find; actual survival may be greater.

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a normal survival rate. We cannot explain this exception, for the original vegetation in the planting spots was thoroughly killed.

How the herbicide kills the seedlings is not known. Since the herbicide was applied as a drenching spray, it is possible that the liquid entered the soil, killing the seedlings by residual toxicity. Another possibility is that the herbicide remained volatile for some time in the treated area.

It has also been suggested that some of the poison may have come in contact with the seedlings during planting. But this possibility is somewhat remote.

The length of time the herbicide remains lethal is not known. Until more information is obtained, it is suggested that 6 months be allowed between herbicide treatment and planting.

--IRVIN C. REIGNER